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STRATEGIC VISION OF DIRECTIONS OF SPATIAL DEVELOPMENT OF INDUSTRIAL CITIES IN THE POST-WAR YEARS

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The article stated that Russia’s military aggression against Ukraine caused and continues to cause enormous damage to industrial cities, as a result of which: control over the occupied territories was lost, production facilities were physically destroyed as a result of terrorist missile attacks, houses, infrastructure objects, etc. were destroyed. The plans of Ukrainian industrial cities regarding their spatial development, modernization, improvement of the quality of life and green transformation were also destroyed. It is emphasized that Davis and Weinstein (2002) on the example of Japan, Germany, South Korea, etc. countries emphasize that with proper financing, damaged industrial cities can recover quite quickly. It has been proven that in this situation the main thing is to correctly predict the future of their spatial development, to form its strategic vision and to clearly define the priority vectors of reconstruction. It is justified that at the regional level it is necessary: to develop clear plans for the reconstruction of industrial cities on the basis of sustainable development, i.e., in addition to the targeted economic and social indicators of the recovery and spatial development of cities, such plans must contain a mandatory ecological component with an analysis of the current situation, a list of mechanisms (plans) solving existing environmental problems and preventing their occurrence in the future; create a map of industrial cities, where the territory of each, based on an understanding of the real possibilities for the return of the population that left these territories, should be described in detail in order to make an optimal decision regarding reconstruction or further spatial development; it is extremely important to ensure the comprehensive nature of the reconstruction; create reliable information and sufficiently reliable forecasts regarding internal and external threats and opportunities; to demonstrate in advance that industrial cities are able to properly manage funds for recovery. The priority vectors of the spatial development of industrial cities on medium and long-term time horizons have been determined. It is emphasized that their introduction in the post-war years will provide a double benefit - it will form the trust of donors, ensure the reconstruction of industrial cities and the progress of their further spatial development.

Keywords: industrial cities, spatial development, reconstruction of industrial cities, sustainable development of industrial cities.

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Introduction and statement of the problem

Russia’s military aggression against Ukraine caused and continues to cause enormous damage to industrial cities, in particular, Mariupol, Donetsk, Kharkiv, Kryvyi Rih, Zaporizhzhya, Dnipro, etc., as a result of which: control over the occupied

territories was lost, industrial facilities were physically destroyed as a result of terrorist missile attacks capacity, destroyed houses, infrastructure facilities, etc. The plans of Ukrainian industrial cities regarding their spatial development, modernization, improvement of quality of life and green

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transformation were also destroyed [1, p. 6].

However, under such extremely difficult conditions, Ukraine does not lose optimism. Protecting the eastern flank of the EU and NATO from armed Russian intervention, suffering from colossal human and financial and economic losses, the country acquired the status of a candidate for EU accession, continues pro-European reforms in various areas, deepens sectoral cooperation with Brussels, fulfills its obligations under the Agreement on association, adheres to the ratified Directives and Regulations of the European Parliament on regional development and development of industrial cities [2, p. 3].

However, for obvious reasons, the complexity of decisions on spatial development (large territories are still under enemy control, many districts are directly adjacent to the front line) is not yet discussed, since the reconstruction of regions and industrial cities is being carried out point by point. According to experts, the main thing in the post-war years is not to make mistakes that were made earlier, because if in the relatively «slow» 20th century, several lost years for correcting mistakes could be quickly made up, then in the 21st, the extra years spent in search can put an end to Ukraine's ambitions to catch up with its European neighbors [3]. Therefore, in order to avoid making mistakes during the reconstruction of Ukraine, one should have a clear strategic vision of the spatial development of industrial cities, regions and the country as a whole, which is precisely what actualizes the need for further research on this topic.

Analysis of recent research and publications

The analysis of the latest research and publications proves that the issue of spatial development of industrial cities during the war and in the post-war years is one of the most pressing issues of today and does not leave both practitioners and scientists indifferent. In particular, in the works of such scientists as Gudz P., Gudz M., Ignatenko O., Shor K., Malkova T., Yurchyshina V., Zymovets V., Kalashnyk P., Mishchenko M., Obukh V., Pashkova M., Pyshchulina O., Sungurovskyi M., Chekunova S. and others. this problem has been considered quite widely. Scientists offer a number of alternative options for the restoration of regions and their spatial development. However, in our opinion, insufficient attention has been paid to the issues of spatial development of industrial cities, which is unacceptable, since it is industrial cities that are the flagship of the spatial development of territories, regions, and the country's economy as a whole. Ignoring or not treating this issue properly in the near future may lead to inhibition of the spatial

development of cities, regions and Ukraine as a whole.

The purpose of the article

The purpose of the article is to form a strategic vision of the spatial development of industrial cities in the post-war years.

Presenting main material

The beginning of the 21st century became a real test of maturity for the Ukrainian state and society. Russia's aggression and its temporary occupation of Crimea and parts of the Donetsk and Luhansk regions in 2014, as well as the full-scale invasion of the Russian Federation into the territory of Ukraine, which turned into a total war, led to the terrible destruction of Ukrainian industrial cities and regions (Table 1).

About 75.8% of the estimated damage to industrial cities was due to; the destruction of two metallurgical plants – the Azov metallurgical plant and the metallurgical plant named after Ilyich; severe damage to the Lysychansk and Kremenchug oil refineries, as well as a significant number of industrial enterprises in Kharkiv, Kyiv, Chernihiv, Mykolaiv,

Table 1
Damage, loss, and needs by oblast (US\$ million) [4]

Oblast	Damage	Loss	Needs
Cherkaska	–	42.6	–
Chernihivska	650.3	7,738.2	1,333.8
Chernivetska	–	9.1	–
Dnipropetrovska	0.0	255.0	0.0
Donetska	4,907.7	29,972.0	10,544.6
Ivano–Frankivska	–	17.5	–
Kharkivska	2,428.5	21,243.5	5,020.2
Khersonska	18.7	213.2	40.9
Khmelnyska	–	24.0	–
Kirovohradska	–	10.2	–
Kyiv (City)	35.0	2,377.7	71.7
Kyivska	579.1	5,762.4	1,228.3
Luhanska	884.2	6,101.0	1,835.2
Lvivska	9.5	218.2	20.7
Mykolaiivska	542.1	3,865.8	1,171.0
Odeska	58.5	370.8	127.9
Poltavska	–	76.3	–
Rivnenska	–	10.8	–
Sumska	245.6	3,470.1	512.5
Ternopil'ska	–	11.8	–
Vinnyska	–	33.6	–
Volynska	–	2.0	–
Zakarpatska	–	9.0	–
Zaporizka	526.0	3,721.1	1,150.7
Zhytomyrska	58.0	285.1	125.5
Total	10,943.2	85,841.0	23,183.0

Sumy, Okhtyrka, and many others, which ultimately led to the deindustrialization of industrial cities and regions, internal and external population migration [5].

Therefore, it will not be possible to quickly restore and modernize the regions and industrial cities of Ukraine. According to the World Bank, for 2023 alone, the total priority needs for the restoration of industry are estimated at 3.85 billion dollars. USA (Table 2), which is about a third of the short-term needs determined for the period until 2026. Most of these costs – 3 billion dollars – fall on the needs of reconstruction, repair of buildings, investments in new equipment, improvement of technological processes and starting of new enterprises. The remaining 850 million dollars. USA – for digitalization, retraining of employees, as well as investments in quality standards and certification for entering new markets (Table 2).

The majority of financing for the restoration of industrial enterprises is provided by means of grants (in particular, within the framework of the «e-Robota» program), preferential lending through the 5–7–9 program; credit lines and other support from the International Finance Corporation (IFC), the European Bank for Reconstruction and Development (EBRD), the Export Credit Agency, MFIs and donors (Table 3).

At the same time, various industrial enterprises

and cities are faced with different tasks. Reconstruction is a priority for destroyed or partially destroyed cities, and further development and transformation for undamaged ones [2, p. 88]. The list of priority tasks for the reconstruction of Ukraine is determined by the Plan for the post-war reconstruction of Ukraine, presented at an international conference in the city of Lugano (Switzerland) in July 2022 [6]. However, its implementation will definitely depend on timely financial support from foreign partners, since, according to the data of the State Statistical Service of Ukraine, as of January 1, 2023, aggregated financial indicators both for the industry of Ukraine as a whole and for its individual sections indicated the existence of disparities and a deficit of working capital (at the level of UAH 1,171 billion), the absence of a buffer reserve to support the viability of industrial enterprises, their abnormally high debt dependence (at the level of 7.0) and insufficient current liquidity [2, p. 89].

Instead, as shown by Davis and Weinstein (2002) on the example of Japan, Germany, South Korea, etc. countries, with proper financing, damaged industrial cities can recover quite quickly. In this situation, the main thing is to accurately predict the future of their spatial development, form its strategic vision and clearly define the priority vectors of reconstruction.

Table 2

Estimated 2023 implementation priorities (US\$ million) as of February 24, 2023 [4]

Category	Types of priority activities/investments	Estimated cost
Reconstruction needs	Repairs/rebuilding firms	1,500.0
	Repairs and investment in new/better machinery and equipment	1,000.0
	Starting a business	200.0
Service delivery restoration needs	Investments in upgrading service delivery systems to access new markets	500.0
	Working capital support	500.0
	Training/reskilling of employees	50.0
	Investments in quality standards, certifications, etc., to access new markets	100.0
Total		3,850.0

Table 3

Estimated government, IFI, and donor contribution to 2023 implementation priorities

Types of instruments	Estimated cost
Grants and matching grants for business repair, modernization, etc.	313.0
Subsidized lending through 5–7–9 program	300.0
Lines of credit	1,000.0
Guarantees and reinsurance to promote investment and exports	514.0
Total	2,127.0

(US\$ million) [4]

Strategic vision of directions of spatial development of industrial cities in the post-war years

Therefore, when making decisions about the reconstruction of industrial cities and their spatial development, the government of Ukraine should take advantage of the experience of successful reconstruction of post-war Japan, Germany, South Korea, Balkan countries, Croatia, etc. In the 25 years after World War II, war-torn Japan and Germany saw GDP per capita grow by 321% and 140%, respectively. South Korea achieved similar economic success 25 years after the end of the conflict – in 1988, its GDP per capita was almost ten times greater than at the time of the 1953 ceasefire. Although the basic value of GDP was extremely low – 1,300 dollars. per capita, by 1988 it had reached a level of about 80% of the GDP of Japan or Germany in 1970. And, of course, South Korea joined the ranks of high-income countries shortly thereafter. The story is similar with the six Balkan countries. The growth of GDP per capita between 1993 and 2016 in Macedonia was between 73% and up to 495% in Montenegro. Therefore, these facts give hope that Ukraine will be able to quickly restore the economy after devastating conflicts [4, p. 266].

And you need to start rebuilding right now. However, current external financing is not enough, internal financing provokes excessive printing of the hryvnia, and frozen Russian state assets amounting to \$300 billion cannot be obtained quickly, as the Western partners so far refuse to support the confiscation of Russian assets in favor of Ukraine, appealing to the inviolability of private property and immunity from confiscation.

However, attempts to force Russia to pay huge reparations, as noted by Roger Myerson (University of Chicago), can be very dangerous. Efforts to exact reparations from Germany after World War I ultimately poisoned postwar German politics, setting the stage for a bellicose regime to come to power that unleashed World War II, which was even more complicated than World War I. This precedent could argue against attempts to force Russia to pay more after the war than the value of its foreign assets, which have already been seized. However, these funds will constitute only a small part of the volume of financing sources necessary for the recovery of Ukraine [7, p. 81]. And so, President V. Zelenskyi proposed to international partners a new model of Ukraine's recovery – patronage over a certain region, city, community, or industry. Almost three dozen countries have already shown interest in this. In particular, Poland and Italy offered to provide assistance for the reconstruction of the Donetsk region. Greece will take part in the restoration of the destroyed Mariupol – it was in this city that a

large ethnic Greek community lived. Three countries – the Czech Republic, Sweden, and Finland – assume leadership over the Luhansk region. The USA and Turkey will help with the reconstruction of Kharkiv. Austria is ready to take over the coordination of the restoration of the Zaporizhzhia region. France and Latvia will help rebuild the Chernihiv region. The Baltic countries – Estonia, Latvia and Lithuania – will help with the restoration of Zhytomyr region. Greece, apart from Mariupol, wants to help with the restoration of Odesa. Denmark undertakes to assist in the restoration of Mykolaiv objects – residential buildings, economic, social and transport infrastructure. Great Britain declared its readiness to take over Kyiv and the region. Norway offers to take over the Kirovohrad Oblast, Ireland over the Rivne Oblast, Canada over the Sumy Oblast. Sweden and the Netherlands will help rebuild the Kherson region [8].

Possible options for financing the reconstruction of industrial cities are also considered: private/foreign capital (with guarantees for private sector investments, public-private partnerships, incentives for the private sector, risk insurance); voluntary contributions of large corporations, etc. [9]. Therefore, the government of Ukraine should already take care of the creation of favorable institutional support for the development of public-private partnerships, concessions, attraction of direct foreign investments, technology transfer, and cooperation between Ukrainian and foreign companies and organizations. Although public funds will play a dominant role in the early stages of recovery, when the focus is on humanitarian aid and the restoration of critical infrastructure, in the long term the initiative should shift to private investors [10]. Direct support of Ukrainian businesses (for example, remote hiring of Ukrainian workers or assistance to Ukrainian firms to enter the EU market) will help not only to preserve the economy of Ukraine, but also to lay the foundations of economic recovery and integration into the EU [7].

However, it is important not only to find financial resources, but also to clearly define the vectors of their direction, because Ukraine received 47 billion dollars during 2014–2022. In the form of aid and loans for the spatial development of territories did not contribute to changing the country's position in the economic development rankings.

Recovery should definitely start with what is critical: energy, housing, demining and critical infrastructure. For example, the EU has already significantly contributed to improving Ukraine's current viability. Since the beginning of Russian

aggression, the EU and European financial institutions have provided up to 50 billion euros in financial, humanitarian, emergency, budgetary and military support [11]. However, the major reconstruction should be started after the war, because the restoration of Ukraine should be a transformation, not a reconstruction to the pre-war state. Deep modernization and spatial development of industrial cities should not only be a “leap” in terms of production technologies and infrastructure, but also a radical improvement of institutions and a reduction in the level of corruption.

At the regional level, it is necessary to develop clear plans for the reconstruction of industrial cities on the basis of sustainable development. They should be based on national level recommendations and take into account local conditions and needs. Such regional development plans require awareness of the economic, social and environmental challenges of the regions, the solution to which should be based on the priority of sustainable long-term use and preservation of local resources (natural and human). It is necessary to take into account the presence and need for specialists in the region, the availability of innovative technologies and the possibility of

developing innovations, the need to ensure the basic needs and safety of the population, ensure the sustainability of the use of natural resources and the preservation and restoration of natural territories for the sustainable and long-term obtaining of quality ecosystem services and countermeasures/mitigation of consequences global climate crisis. That is, in addition to the targeted economic and social indicators of the restoration and spatial development of cities, such plans must contain a mandatory environmental component with an analysis of the current situation, a list of mechanisms (plans) for solving existing environmental problems and preventing their occurrence in the future [8, p. 19]. Such a step-by-step approach to the reconstruction and spatial development of industrial cities will not only make the reconstruction of Ukraine acceptable to foreign investors and investors, but will also improve the distribution of resources in the long term [9, p. 14].

However, neither government officials nor scientists have formed a consensus regarding the vectors and phasing of recovery of Ukraine’s regions in the post-war years. Some of them emphasize the need for complete simultaneous reconstruction of

Restoration territories	communities, on the territory of which hostilities took place and/or which were temporarily occupied, and/or whose territories suffered destruction of critical infrastructure objects, social infrastructure, housing stock objects as a result of the conduct of hostilities, and which are characterized by a sharp deterioration of the level of socio-economic development and significant displacement of the population to other regions and/or other states
Regional poles of growth	micro-regions, territorial communities, which are characterized by significantly better geographical, demographic, socio-economic development indicators compared to other similar territories of the region, and the growth of which has a positive effect on neighboring territories, the region and/or the state as a whole.
Territories with special conditions for development	macro-regions, micro-regions, territorial communities, the level of socio-economic development of which is low or where there are natural, demographic, international, security or other objective restrictions on the use of the potential of the territory for development
Territories of sustainable development	self-sufficient micro-regions, territorial communities with the existing socio-economic potential of the territories and capable of balanced development in the economic, social, and ecological spheres

Functional types of territories affected by armed aggression against Ukraine [12]

all damaged cities, which, in our opinion, is an extremely difficult task and will require huge economic costs. Others argue that industrial cities should be preferred initially. So, the question arises how to choose cities for reconstruction? This question is answered by the Law of Ukraine “On the Basics of State Regional Policy” dated February 5, 2015 under No. 156-VIII [12], which establishes the specifics of the recovery of regions and territories affected by armed aggression against Ukraine. Yes, item 11–2 of Art. 11 of the Law [12] determines that the following functional types of territories are defined for planning the restoration and stimulation of the development of regions and territories, as well as for the purpose of introducing special mechanisms and tools by the executive authorities and local self-government bodies (Figure).

Based on such a macro-regional division, it is necessary to plan the possible specialization of these regions, determine the most optimal structure of the regional economy, location of production facilities, plan the settlement system and review transport corridors and logistics. Because different regions and industrial cities have significantly different losses as a result of the war, and therefore require different approaches to planning spatial development or recovery. After all, even within one region, there are cities where most of the territory was either destroyed due to hostilities or looted during the occupation, and there are cities that have no destruction at all and were bypassed by the occupation [4]. For this, a map of industrial cities should be created, where the territory of each should be described in detail in order to make an optimal decision regarding reconstruction or further spatial development. In addition, the restoration of the affected areas should be based on an understanding of the real possibilities for the return of the population that left these areas [13].

It is also worth remembering that when we talk about reconstruction, we are talking primarily not about the sector, but about the territories of industrial cities that were directly or indirectly affected by the war. That is why it is extremely important that measures to restore them are comprehensive, based on reliable information and sufficiently reliable forecasts regarding internal and external threats and opportunities.

The reconstruction of the affected areas and industrial cities will definitely require significant financial resources, which are not available at the local level and are quite small in the state budget of Ukraine, so the creation of the State Fund for Reconstruction and Regional Development

(hereinafter referred to as the State Fund for Reconstruction and Regional Development) is envisaged, which will be financed from various sources, primarily confiscated assets of the Russian Federation, contributions from donor countries, loans from international financial organizations [13].

Only programs aimed at the recovery of regions and included in the Recovery Plan, which is an integral part of the State Strategy for Regional Development, will be financed with the funds of the DFVR. However, only representatives of regional and Kyiv city state administrations will be able to apply for funds from the Recovery Fund to the Ministry of Infrastructure, the Ministry of Energy, the Ministry of Health and the Ministry of Education and Culture. Therefore, the mayors of industrial cities and communities will be dependent on them, which in the future may become a problem in solving issues related to the reconstruction of their territories.

In addition, despite the creation of special working groups that will study applications for receiving funds, the final decision will be made by the ministries and the government. Therefore, the process of distribution of funds will be centralized and will function in «manual mode», i.e. non-transparent and non-public. For Ukraine, it is important to demonstrate in advance that it is able to properly dispose of funds for reconstruction. Proof that the Government carries out proper financial management will be a necessary condition in the preparatory stages for EU membership. Here, it is very important to establish rules for financing from the funds of the fund, which are as close as possible to the rules used in the EU when financing from the pre-accession and EU Structural Funds. This will provide a double benefit - trust of donors and preparation for joining the EU [13].

All this requires the introduction of changes or the adoption of a new version of the State Strategy for Regional Development for the period until 2027, a component part of which may be the Regional Recovery Plan.

Conclusions

Thus, according to the results of the study, it was established that Russia’s military aggression against Ukraine caused and continues to cause enormous damage to industrial cities, as a result of which: control over the occupied territories was lost, production facilities were physically destroyed as a result of terrorist missile attacks, houses, infrastructure facilities, etc. were destroyed. The plans of Ukrainian industrial cities regarding their spatial development, modernization, improvement of the quality of life and green transformation were also destroyed.

Instead, as shown by Davis and Weinstein (2002) on the example of Japan, Germany, South Korea, etc. countries, with proper financing, damaged industrial cities can recover quite quickly. In this situation, the main thing is to accurately predict the future of their spatial development, form its strategic vision and clearly define the priority vectors of reconstruction. Therefore, at the regional level, it is necessary:

– to develop clear plans for the reconstruction of industrial cities on the basis of sustainable development. That is, in addition to the targeted economic and social indicators of the recovery and spatial development of cities, such plans must contain a mandatory environmental component with an analysis of the current situation, a list of mechanisms (plans) for solving existing environmental problems and preventing their occurrence in the future;

– create a map of industrial cities, where the territory of each, based on an understanding of the real possibilities for the return of the population that left these territories, should be described in detail in order to make an optimal decision regarding reconstruction or further spatial development;

– it is extremely important to ensure the comprehensive nature of the reconstruction;

– create reliable information and sufficiently reliable forecasts regarding internal and external threats and opportunities;

– to demonstrate in advance that industrial cities are able to properly manage funds for recovery.

The implementation of the listed measures will provide a double benefit – the trust of donors and ensuring the reconstruction of industrial cities and their further spatial development in the post-war years.

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СТРАТЕГІЧНЕ БАЧЕННЯ НАПРЯМІВ ПРОСТОРОВОГО РОЗВИТКУ ПРОМИСЛОВИХ МІСТ У ПОВОЄННІ РОКИ

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У статті констатовано, що військова агресія Росії проти України завдала та продовжує завдавати величезної шкоди промисловим містам, внаслідок чого: втрачено контроль на окупованих територіях, фізично знищено унаслідок терористичних ракетних ударів виробничі потужності, зруйновано будинки, об'єкти інфраструктури тощо. Зруйновано й плани українських промислових міст щодо їх просторового розвитку, модернізації, покращення якості життя та зеленої трансформації. Наголошено, що Davis and Weinstein (2002) на прикладі Японії, Німеччини, Південної Кореї та ін. країн акцентують, що за належного фінансування пошкоджені промислові міста можуть досить швидко відновитися. Доведено, що в цій ситуації головне правильно спрогнозувати майбутнє їх просторового розвитку, сформувати його стратегічне бачення та чітко визначитись з пріоритетними векторами відбудови. Обґрунтовано, що на регіональному рівні необхідно: розробити чіткі плани відбудови промислових міст на засадах сталого розвитку, тобто, окрім цільових економічних і соціальних показників відновлення та просторового розвитку міст, такі плани мають містити обов'язкову екологічну складову з аналізом поточної ситуації, переліком механізмів (планів) вирішення наявних екологічних проблем і запобігання їх виникнення у майбутньому; створити карту промислових міст, де територія кожного на основі розуміння реальних можливостей щодо повернення населення, яке покинуло ці території, має бути детально описана для прийняття оптимального рішення щодо відбудови чи подальшого просторового розвитку; вкрай важливо забезпечити комплексність характеру відбудови; створити достовірну інформацію та достатньо вірогідні прогнози щодо внутрішніх і зовнішніх загроз і можливостей; заздалегідь продемонструвати, що промислові міста здатні правильно розпоряджатися коштами на відновлення. Визначено пріоритетні вектори просторового розвитку промислових міст на середньо- та довгострокових часових горизонтах. Підкреслено, що їх запровадження у повоєнні роки надасть подвійну вигоду – сформує довіру донорів, забезпечить відбудову промислових міст і прогрес їх подальшого просторового розвитку.

Ключові слова: промислові міста, просторовий розвиток, відбудова промислових міст, сталий розвиток промислових міст.

STRATEGIC VISION OF DIRECTIONS OF SPATIAL DEVELOPMENT OF INDUSTRIAL CITIES IN THE POST- WAR YEARS

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The article stated that Russia's military aggression against Ukraine caused and continues to cause enormous damage to industrial cities, as a result of which: control over the occupied territories was lost, production facilities were physically destroyed as a result of terrorist missile attacks, houses, infrastructure objects, etc. were destroyed. The plans of Ukrainian industrial cities regarding their spatial development, modernization, improvement of the quality of life and green transformation were also destroyed. It is emphasized that Davis and Weinstein (2002) on the example of Japan, Germany, South Korea, etc. countries emphasize that with proper financing, damaged industrial cities can recover quite quickly. It has been proven that in this situation the main thing is to correctly predict the future of their spatial development, to form its strategic vision and to clearly define the priority vectors of reconstruction. It is justified that at the regional level it is necessary: to develop clear plans for the reconstruction of industrial cities on the basis of sustainable development, i.e., in addition to the targeted economic and social indicators of the recovery and spatial development of cities, such plans must contain a mandatory ecological component with an analysis of the current situation, a list of mechanisms (plans) solving existing environmental problems and preventing their occurrence in the future; create a map of industrial cities, where the territory of each, based on an understanding of the real possibilities for the return of the population that left these territories, should be described in detail in order to make an optimal decision regarding reconstruction or further spatial development; it is extremely important to ensure the comprehensive nature of the reconstruction; create reliable information and sufficiently reliable forecasts regarding internal and external threats and opportunities; to demonstrate in advance that industrial cities are able to properly manage funds for recovery. The priority vectors of the spatial development of industrial cities on medium and long-term time horizons have been determined. It is emphasized that their introduction in the post-war years will provide a double benefit – it will form the trust of donors, ensure the reconstruction of industrial cities and the progress of their further spatial development.

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